GIS and New Pipeline Construction: Best Practice for Validating GIS Data

John W. Marino
Plains All American Pipeline LP

Jacob Ramirez
BSD Consulting Inc.

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Why does it matter?
Why does it matter?

Trust in GIS
The Secret Sauce

Predictable Project Deliverable
Ensuring Predicable & Transparent GIS Data Deliveries

• Communication
• Documented GIS Workflows
• Automated Data QC and Reporting
• Feedback to all systems/stakeholders
Communication is KEY!

Engineering

Schedule

Standards

Construction & Inspection

Survey
Project Pre-Planning

• Project kickoff meeting to issue required documents, files, and databases to survey contractors and convey expectations.
  – Survey Standard
  – Data Dictionary
  – Blue Sky Project Database Seed File
  – Procurement Data for Purchased Materials
Project Communication

- Inspection
- Weld Map
- Constant data QC and comparison
- Survey
- Weld Map
- Constant data QC and comparison
- Survey Feature Codes
- Inspection Material Inventory
Provide Feedback with Metrics

- QC data for quality weekly/bi-weekly
- Creates training opportunity between operator and contractor.

![Survey Data Summary](image)
Communication Breakdown Leads to Data Gaps

Engineering

Construction & Inspection

Survey
Construction and Survey Scheduling

- Rode bore installation
- Drag section pulled through
- Survey missed weld shots
Communication Breakdown
Missing Welder Stencil

Welder Initials

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Girth Weld Data Points
Documented GIS Workflows:
ESRI Workflow Manager
Blue Sky Project Database Validation

- Verify survey data is delivered in format defined in survey standard.

For questions on delivery requirements, please contact jwmerino@paapl.com
Duplicate Point Numbers Report

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Centerline Checks

PF Prep

PF Checks

PF Create CL

PF Rework

PF PreCheck

PF Offline Points

PF Run BSD_LD

Express Loader

PF Spatial QC

Data Edits

Load Data

Approve

Notify As-Built Loaded

Close Job
Centerline Topology:
Spatial Check for self intersecting centerline (2D Environment)
Corrected Centerline
A difference of 16 linear feet.
Offline Events Checks

- Walk key subcode tables in ArcMap and remove survey shots not located on the centerline
Address Offline Events

- Station is derived for all survey points and stored in the project database
- SQL Filters can help, but entire crossings can be filtered out
Offline Events Continued

- Offline weld data can cause errors when striking the centerline and loading data to PODS
What does all the project management buy us??
Successful PODS Data Load

• Load data within 60 days of delivery of Final Approved As-built Point File from Survey Contractor
• Accurate centerline alignment and linear reference
• Records of compliance and due diligence
Questions?